Reply to the Editor:

I appreciate the letter by Rosenfeldt and colleagues, and I fully agree that prevention of vein graft disease is the first step to improve vein graft longevity. In addition to using a surgical no-touch technique, Souza and colleagues[1] recently presented long-term data on the superior performance of saphenous veins that were harvested with their surrounding tissue. The ischemic time of the harvested vein and the type of storage medium play a role too. Furthermore, we have to keep in mind that the greater the target vessel diameter the better the vein graft longevity. Rosenfeldt and colleagues focus on the problem of dilation of the saphenous veins before implantation, which inevitably leads to endothelial injury (and stretch-induced apoptosis of vascular cells). Their concept of pharmacologic (instead of mechanical) dilation of the saphenous veins in coronary artery bypass grafting seems to be a rational concept. However, single preventive or therapeutic strategies against vein graft disease are insufficient. Thus, a combination of measurements seems worthwhile. A variety of models of vein graft disease have taught us pathologic features of vein graft disease.[2] Nevertheless, only a couple of therapeutic interventions (systemic pharmacotherapy) have reached clinical practice (mainly aspirin and statins). Thus, an additional local therapy of the vein graft might be an attractive option to fulfill the armamentarium of the cardiac surgeon against vein graft degeneration (Figure 1).

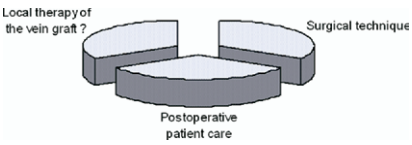

Figure 1. Strategies to fight vein graft disease.

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References

1. Souza DS, Johannson B, Bojo L, et al. Harvesting the saphenous vein with surrounding tissue for CABG provides long-term graft patency comparable to the left internal thoracic artery: results of a randomized longitudinal trial. *J Thorac Cardiovasc Surg.* 2006; 132:373-8.
2. Schachner T, Laufer G, Bonatti J. In vivo (animal) models of vein graft disease. *Eur J Cardiothorac Surg.* 2006;30:451-63.

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To the Editor:

We appreciate Dr Chitwood's insightful editorial[1] concerning our report on endoscopic robotic mitral valve surgery.[2] We disagree, however, with his opinion concerning the capability of the patient-side assistant in robotic mitral valve surgery. Chitwood states the "ideal robotic mitral" should be performed completely robotically from the operative console because "a port incision less than 4 cm does not facilitate extracorporeal knot tying or other cardiac manipulations." In our clinical experience we have not found this observation to be true. As we reported, the patient-side assistant using shafted instruments plays an important role in our endoscopic robotic technique, both enhancing valve exposure and facilitating valve repair. In fact, extracorporeal suture tying by the patient-side assistant using a closed loop knot pusher has become our routine because it is faster and more consistent in our experience than robotic tying by the console surgeon. How could 2 clinically experienced robotic mitral surgery teams have such a different perception of the capability of the patient-side assistant? We believe the answer relates to a critical difference in the port incision locations between our respective robotic mitral techniques. Chitwood uses a single inframammary fold incision for both endoscope insertion and patient-side assistant access.[3] By using straight, shafted, handheld instruments passed immediately adjacent and nearly parallel to a 30-degree up endoscope, we believe conflicts are inherent for Chitwood's assistant attempting to reach valvular structures. We use separate ports for the endoscope and the assistant's access and locate these ports substantially more laterally on the chest wall than Chitwood's technique. By separating these 2 ports and moving them laterally we exploit the natural curvature of the thoracic cage to compensate for the difference between the angled endoscope and the assistant's straight instruments. This orientation minimizes instrument conflicts and facilitates the assistant's ability to reach the valvular structures directly. In our initial experience this assistant access port was slightly less than 4 cm, but now with the newer robotic system this port incision has been reduced to 2 cm (Figure 1). Our patient-side assistant continues to play an active role in valve repair through this smaller port. From the standpoint of patient care, it has been the quality of the knots that has been clinically relevant, not which member of the surgical team tied them. Although the surgical technique we describe may or may not be "real endoscopic cardiac surgery," it has permitted us to achieve a higher mitral valve repair rate with minimal invasion.

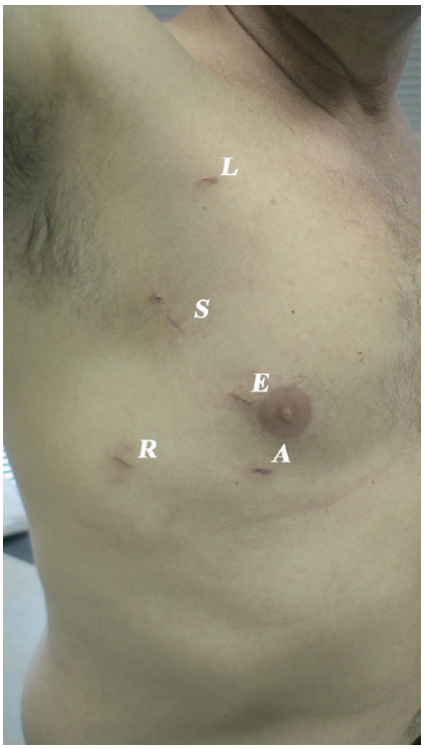

Figure 1. Endoscopic robotic ports. *S,* Patient-side assistant's port; *R,* right robotic instrument arm; *L,* left robotic instrument arm; *E,* robotic endoscope; *A,* robotic atrial retractor arm.

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